

become comparative anatomists, but only wish to gain a little knowledge of Vertebrate anatomy. It is not an easy matter, for instance, for a beginner to dissect out the nerves of the head and neck in so small a mammal as the rat, and even the less delicate dissections can be done much more satisfactorily on a larger animal.

The directions for examination and dissection are clear, but scarcely full enough in some places. The methods given as regards the vascular system, for instance, are somewhat meagre, and the muscles are not touched upon at all. The woodcuts, which illustrate the skull only, are rough, and we fail to see much advantage in giving figures of the skull when the soft parts—illustrations of which are so much more required by the student—are neglected.

It would perhaps have been as well to omit the question as to the homology of the malleus and incus, given on the first page, as recent researches seem to throw so much doubt on this point.

Apart from the defects to which we have called attention, the book is well arranged, and any one wishing to learn from it how to dissect a Rodent will be greatly helped by its systematic directions and accurate descriptions.

A Course of Instruction in Zootomy (Vertebrata). By T. Jeffrey Parker, B.Sc., Professor of Biology in the University of Otago. (London: Macmillan and Co., 1884.)

ALTHOUGH the study of biology has advanced very rapidly of late years, there is still a great want of really good text-books in several of its branches. The volume before us, which forms the latest addition to the excellent series of "Manuals for Students," is an attempt to fill up one of the most patent of these gaps, and teachers and students of morphology have alike reason to be grateful to Prof. Parker for the manner in which he has performed his work.

The book consists of a short introduction on the methods of dissection, injection, and preservation of specimens, followed by a series of descriptions of certain typical Vertebrates, with practical directions for their examination by dissection or otherwise. The types described are the lamprey, skate, cod, lizard, pigeon, and rabbit, and have been chosen partly from their intrinsic importance, and partly because they "are mostly such as can be readily obtained at any time of year."

The selection of animals is a judicious one, though we should like to have seen *Amphioxus* included in the list; the descriptions are clear and accurate, and the practical directions good. The book is of convenient size, well printed, and admirably illustrated by a series of upwards of seventy figures, which, with very few exceptions, are original. Many of these figures, notably those of the lamprey and those of the nervous and vascular systems throughout the book, are of unusual excellence, and both author and publishers deserve much credit for having so fully recognised the necessity of providing new illustrations in place of the old worn-out and often incorrect ones that have disgraced our zoological books for so many years. A few of the figures might with advantage be rather larger and more diagrammatic.

While freely and gratefully acknowledging the merits of the book, which are such as to insure its adoption at once in all morphological laboratories, there are certain features which we think should not escape criticism. Thus the general arrangement of the book might easily be improved: the "indented" paragraphs will certainly be taken for minor rather than major subdivisions; the system of numbering the paragraphs does not appear to us to serve any useful end, and the repetition of the title of the book on every alternate page is simply throwing away a valuable opportunity of facilitating reference.

A far more serious objection, however, is the very small allowance of that "salt of morphological ideas" which Prof. Parker extols in his preface but almost entirely

omits to supply us with in the book itself. Thus, although the several types selected are arranged in a progressive series, there is practically no attempt made to compare them with one another, or to direct the student's attention to the modifications undergone by the various organs in advancing from generalised to more specialised types. Again, it is surely a mistake to describe the bones of the skull one by one, without any reference to their positions as regards the morphological elements of which the skull consists, or even the distinction between cartilage bones and membrane bones; and the same objection applies with especial force to the description of the urinary organs.

However, in thus criticising what appears to us its weak side, we are fully aware that we are finding fault with the conceptions which Prof. Parker has had of the type of book wanted rather than with the manner in which he has carried out his own ideas on the subject. As a practical laboratory guide, the "Course of Instruction in Zootomy" is a valuable addition to zoological literature, and one which will certainly meet with ready and large acceptance.

A. M. M.

Van Nostrand's Science Series. Dynamic Electricity.

By J. Hopkinson, J. N. Shoolbred, and R. E. Day (New York: Van Nostrand, 1884.)

Dynamo-Electric Machinery. By Prof. Silvanus P. Thompson. (New York: Van Nostrand, 1884.)

THESE latest additions to Van Nostrand's "Science Series" are reprints of pamphlets published in England. The first of the volumes contains a lecture by Dr. Hopkinson, which originally formed one of a series delivered at the Institution of Civil Engineers a year ago; a paper by Mr. Shoolbred, also delivered last year and a little work on electric calculations, drawn up by Mr. Day for the evening science classes at King's College, published in 1882 by Messrs. Macmillan and Co. For the title "Dynamic-Electricity," the American publishers of this medley are alone responsible. The other volume is a reprint of Prof. Thompson's Cantor Lectures, with an introduction by Mr. F. L. Pope. Mr. Pope's idea of editing appears to be to reprint baldly from the unrevised English issue, and to foist into the book two or three large unexplained diagrams of Edison's and Weston's forms of dynamo. We cannot congratulate either the authors or the publishers on the issue of these unauthorised editions.

The Principles and Practice of Electric Lighting. By Alan A. Campbell Swinton. Pp. 172. (London: Longmans, Green, and Co., 1884.)

THIS is a handy and well-written account of the chief kinds of machines and lamps used in electric lighting; perhaps the best of the numerous small works lately published on the subject. It is full of information and in almost every respect up to date, though the chapter on the cost of electric lighting is already more or less put out of date by the progress of invention. The author writes impartially and agreeably. He should not call the "watt" a unit of energy.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

The Rings of Saturn

IN the interesting account of the observations of Messrs. Henry on the rings of Saturn (NATURE, May 29, p. 105) they seem to

consider the bright ring they then saw as new. On looking over my note-book I find I observed indications of such a bright ring extending inwards as far as the limb of ball. The exact words are, "I see a brighter line here," with a sketch according in position with the position of the ring shown by Messrs. Henry. The date of this observation is November 28, 1881, 11h. 35m. to 11h. 55m. I had noticed a great difference in comparing this observation with the fine sketch (given in "Instruments and Publications of the U.S. Naval Observatory, 1845-1876") by Trouvelot, made with the large telescope at Washington in 1875. In this sketch this edge, that I saw bright and that Messrs. Henry show brighter, is shown as dull and breaking up. It is true that Trouvelot saw and sketched the *other side* of the rings, but that will scarcely account for what is certainly a great difference. In the text relating to this drawing of Trouvelot's this occurs: "Of this and the succeeding figures it may in general be said that nothing is laid down which was not seen by more than one observer. The exception to this is in the case of the notches represented on the inside of the outer ring of Saturn, which were seen by M. Trouvelot with the 15-inch telescope of Harvard College Observatory, and again in Washington, and of whose existence he has no doubt."

It will be extremely interesting to know what M. Trouvelot can now see with the same instruments, as the evidence of rapid change is very strong.

A. AINSLIE COMMON

June

An Experiment in Thought-Transference

THOSE of your readers who are interested in the subject of thought-transference, now being investigated, may be glad to hear of a little experiment which I recently tried here. The series of experiments was originated and carried on in this city by Mr. Malcolm Guthrie, and he has prevailed on me, on Dr. Herdman, and on one or two other more or less scientific witnesses, to be present on several occasions, to critically examine the conditions, and to impose any fresh ones that we thought desirable. I need not enter into particulars, but I will just say that the conditions under which apparent transference of thought occurs from one or more persons, steadfastly thinking, to another in the same room blindfold and wholly disconnected from the others, seem to me absolutely satisfactory, and such as to preclude the possibility of conscious collusion on the one hand or unconscious muscular indication on the other.

One evening last week after two thinkers, or agents, had been several times successful in instilling the idea of some object or drawing, at which they were looking, into the mind of the blindfold person, or percipient, I brought into the room a double opaque sheet of thick paper with a square drawn on one side and a cross or X on the other, and silently arranged it between the two agents so that each looked on one side without any notion of what was on the other. The percipient was not informed in any way that a novel modification was being made; and, as usual, there was no contact of any sort or kind, a clear space of several feet existing between each of the three people. I thought that by this variation I should decide whether either of the two agents was more active than the other; or, supposing them about equal, whether two ideas in two separate minds could be fused into one by the percipient. In a very short time the percipient made the following remarks, every one else being silent: "The thing won't keep still." "I seem to see things moving about." "First I see a thing up there, and then one down there." "I can't see either distinctly." The object was then hidden, and the percipient was told to take off the bandage and to draw the impression in her mind on a sheet of paper. She drew a square, and then said, "There was the other thing as well," and drew a cross inside the square from corner to corner, saying afterwards, "I don't know what made me put it inside."

The experiment is no more conclusive at evidence than fifty others that I have seen at Mr. Guthrie's, but it seems to me somewhat interesting that two minds should produce a disconnected sort of impression on the mind of the percipient, quite different from that which we had formerly obtained when two agents were both looking at the same thing. Once, for instance, when the object was a rude drawing of the main lines in a Union Jack, the figure was reproduced by the percipient as a whole without misgiving; except, indeed, that she expressed a doubt as to whether its middle horizontal line were present or not, and ultimately omitted it.

OLIVER J. LODGE

University College, Liverpool, June 5

The Earthquake

SHORTLY after the shock of April 22 (which, by the way, was felt here and in Doughty Street by people in bed at the time) I commenced to collect evidence for the preparation of a detailed report, at first with the object of placing the materials at the disposal of any individual or Society that might be willing to take the matter up, as I felt certain that such a visitation would not be allowed to pass without attracting the attention of scientific men. It afterwards occurred to me that, as the focus of the disturbance was in East Essex, the most appropriate Society to undertake the publication of the report would be the Essex Field Club, within whose province the subject fairly comes. Having secured the assistance of one of our members, Mr. William White, I brought the matter before the meeting of the Club on April 26, and, a week later, took the opportunity of going over the districts most affected, taking notes and measurements of the angles of cracks, twists of chimneys, the positions of stopped clocks, and collecting all other information bearing upon this which is certainly the most serious earthquake that has been recorded in Britain. On this journey I was accompanied by Mr. T. V. Holmes (late of the Geological Survey) and Mr. William Cole (Hon. Sec. of the Club); Dr. Henry Laver and Mr. J. C. Shennstone, of Colchester, giving us the benefit of their local knowledge as guides. Starting from Colchester, we visited Wivenhoe, Rowhedge, East Donyland, Abberton, Peldon, West and East Mersea, Langenhoe, Fingringhoe, and the intermediate hamlets.

Hearing that my friend Mr. G. J. Symons had also been over the ground, I communicated with him, and he kindly agreed to place the whole of his materials, consisting of field-notes, maps, correspondence, and newspaper reports, at my disposal as soon as he had completed a short report which he was preparing for his *Monthly Meteorological Magazine*, and which appears in the May number of that excellent periodical. Mr. E. B. Knobel (Sec. R.A.S.), having also visited the district, has favoured me with some notes and observations, and the local press having taken the matter up on our behalf, a set of queries applying for information on the most essential points has been freely circulated throughout the county. As the result of our joint labours, I now possess a vast amount of material that requires *reducing* (both literally and in the astronomical sense), and upon which I have been engaged for the past few weeks; but as the complete discussion of all the facts will take a considerable time, I refrain for the present from expressing any views either in confirmation of or in opposition to those already put forward by your correspondents. In the meantime I will ask permission to appeal either directly or through your columns for further information from scientific observers.

R. MELDOLA

21, John Street, Bedford Row, June 7

I NOTICE that in Mr. Topley's account of the earthquake in your issue of May 1 (p. 17) there is no record of its having been felt in any part of Surrey. In order that those interested may fill in further points, I send you the inclosed interesting letter I have received from Mrs. Bernard. I may also add that it was felt near Farnboro' on the South-Western line of railway.

Deepdale, Reigate, June 6 H. H. GODWIN-AUSTEN

"Overross, Ross, Herefordshire, June 2

"I ONLY felt it slightly, but quite decidedly. We were at Bentsbrook on the Holmwood at the time. The house is rather high, and I was sitting up in bed in an upstairs bed-room, when at about 9.30 or perhaps a little sooner, I distinctly felt the bed shake (from head to foot, I think west to east, not across) two or three times, and after a pause shake again in the same way. I had no watch to see the exact time, but I had heard the clock strike nine, and guessed it was about twenty or twenty-five minutes past. I did not see any furniture move, it was too slight for that. But I remarked on it to a servant who came up a short time after, and said I feared there had been a dynamite explosion in London. I was very much interested to see 'Earthquake in England' in the paper next morning, and to think that I had felt it so far off. Mr. Charles Chaldecott (the doctor at Dorking) told me another lady, I think in Dorking, had felt it too.

"K. M. BERNARD"

Kohlrausch's Meter-Bridge

MR. GLAZEBROOK, in commenting at the Physical Society on my use of Kohlrausch's meter-bridge with the telephone for the